



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
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September 29, 2014

Cindy Bladey, Chief
Rules, Announcements, and Directives Branch (RADB)
Division of Administrative Services, Office of Administration
Mail Stop: 3WFN-06-A44MP
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJ: EPA Review and Comments
Draft Generic Supplemental Environmental Impact Statement (DGSEIS)
License Renewal of Nuclear Plants, Supplement 53
Regarding Sequoyah Nuclear Plant, Units 1 and 2
CEQ No. 20140222

Dear Ms. Bladey:

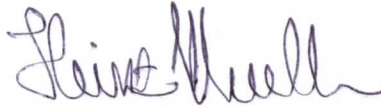
Pursuant to Section 309 of the Clean Air Act (CAA) and Section 102(2)(C) of the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA), Region 4 reviewed the Draft Generic Supplemental Environmental Impact Statement (DGSEIS) for the License Renewal of Nuclear Plants, Supplement 53, regarding Sequoyah Nuclear Plant, Units 1 and 2 (SQN). We appreciate your coordination with us. The purpose of this letter is to transmit the results of the EPA's review.

The DGSEIS was prepared in response to an application submitted by the Tennessee Valley Authority (TVA) to renew the operating license for Sequoyah Nuclear Plant, Units 1 and 2 (SQN), for an additional 20 years. The NRC's proposed Federal action is to make a decision whether or not to renew the SQN operating licenses for an additional 20 years. The DGSEIS includes the preliminary analysis that evaluates the environmental impacts of the proposed action and alternatives to the proposed action. The alternatives considered include: natural gas combined-cycle generation, supercritical pulverized coal generation, new nuclear generation, combination wind and solar generation, and no renewal of the license (the no-action alternative). The U.S. Nuclear Regulatory Commission's (NRC's) preliminary recommendation is that the adverse environmental impacts of license renewal for SQN are not great enough to deny the option of license renewal. Further, the NRC staff concluded that the continued operation of the existing SQN is the environmentally preferred alternative (Section 5.2).

Based on our review, the EPA Region 4 is rating the Preferred Alternative an EC-2, meaning that there are environmental concerns, and that additional information is requested in the Final GSEIS (FGSEIS). Our detailed comments and Summary of Rating Definitions and Follow Up Action are enclosed.

In conclusion, the DGSEIS provides useful information for assessment of the proposed action. Thank you for the opportunity to comment on this project. We look forward to reviewing the FGSEIS. If you have any questions, please contact Ramona McConney of my staff at 404-562- 9615.

Sincerely,

A handwritten signature in blue ink, appearing to read "Heinz Mueller", with a stylized, flowing script.

Heinz J. Mueller, Chief
NEPA Program Office

cc: David Drucker, DOE
Sarah Lopas, NRC

Enclosures: EPA Review and Comments
Summary of Rating Definitions and Follow Up Action

EPA Review and Comments
Draft Generic Supplemental Environmental Impact Statement (DGSEIS)
License Renewal of Nuclear Plants, Supplement 53
Regarding Sequoyah Nuclear Plant, Units 1 and 2

General

The proposed action stated in the DGSEIS is the issuance of renewed licenses to provide an option that allows for electrical power generation beyond the current term, in order to meet future needs. The decision to be supported by the SEIS is whether or not to renew the operating licenses for SQN for an additional 20 years. SQN Units 1 and 2 began operations in 1981 and 1982, respectively. The DGSEIS states that there are no plans for refurbishment at SQN for license renewal (page 4-94).

Recommendations: The FGSEIS should clarify the physical condition and status of the facility, relative to structural integrity. Maintenance plans pertaining to facility aging should also be addressed. Additional information pertaining to structural integrity and facility aging (data, analyses, and/or discussions) should be included (or referenced as appropriate) in the FGSEIS.

Emergency Preparedness

The U.S. Geological Survey (USGS) recently released updated 2014 seismic hazard maps for the U.S., and we recommend that these maps be evaluated in relation to the facility location, surrounding area and supporting infrastructure.

Recommendations: The recently updated USGS 2014 seismic hazard maps should be evaluated in relation to the project location and facilities. The evaluation should include assessment of the structural integrity and status of the existing on-site structures, on-site and local infrastructure, and emergency preparedness procedures in the event of seismic activity. Emergency preparedness should also include planning in case of a regional emergency. The FGSEIS should include updated information pertaining to the new seismic hazard maps, and issues that are identified in the seismic hazard evaluation should be addressed as the project progresses.

Radioactive Waste

Storage, transportation and disposition of radionuclides are issues of particular and ongoing concern. The EPA commented on the NRC's *Waste Confidence Draft Generic Environmental Impact Statement* regarding the update to the Waste Confidence Rule. The EPA's comment letter was submitted to the NRC on January 15, 2014.

The NRC lifted the suspension on final licensing decisions, in view of the issuance of a revised rule, (the final Continued Storage Rule), codifying the NRC's generic determinations regarding the environmental impacts of continued storage of spent nuclear fuel beyond a reactor's licensed operating life (stated in the NRC memorandum and order dated September 26, 2014).

The *Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel* (GEIS) was recently published and is currently under EPA review. The document discusses the environmental impacts of continued storage, including those impacts identified in the remand by the Court of Appeals in the *New York v. NRC* decision, and provides a regulatory basis for a revision to 10 CFR 51.23 that addresses the environmental impacts of continued storage for use in future environmental reviews. TVA operations in relation to radionuclides would be required to comply with any regulatory requirements resulting from the Record of Decision that occurs as a result of the Continued Storage Rule.

The alternatives evaluated in the DGSEIS would have differing impacts regarding the quantity of radioactive waste generated and stored onsite. If the license is renewed, a consequence of this action would be additional spent nuclear fuel produced and residing at the SQN site, until a national policy is in place providing for the permanent disposition of spent nuclear fuel. This on-site storage could potentially continue for a long or indefinite term.

Recommendation: The FGSEIS should include updated information regarding the Record of Decision for the Continued Storage Rule, and its effects in relationship to this project. The FGSEIS should address how radioactive waste handling, storage, and disposition will be conducted at the facility under circumstances where decades of onsite storage is required. The FGSEIS should clarify the potential changes in direct, indirect and cumulative impacts that may occur as a result of the updated Rule.

Tennessee River System

The TVA operates and regulates the Tennessee River system and its many impoundments, including the Chickamauga Reservoir, to provide for multiple, year-round uses for navigation, flood control, power generation, water-quality improvement and aquatic resources, water supply, recreation, and economic growth.

Limitations on withdrawals are closely related to thermal compliance for plant diffuser discharges through NPDES permitted outfall 101 to the Tennessee River. The SQN uses once-through cooling both with and without the assistance of cooling towers (termed helper and open modes, respectively). SQN operates in a once-through cooling water system during most of the year. In the open mode, the water bypasses the cooling tower lift pumps and is returned to the Chickamauga Reservoir through the diffuser pond and the discharge diffusers site is located on a peninsula on the western shore of Chickamauga Reservoir. To date, no thermal discharge limit has been exceeded under the current NPDES permit (page 4-18).

Recommendations: The FGSEIS should clarify the frequency of sampling and monitoring measures, and these measures should be stated in the decision-making documents.

Radionuclides in Groundwater

Section 3.5.2.3 discusses groundwater quality around the SQN, and notes that tritium concentrations in groundwater were detected above background levels near some of the plant

structures. The concentrations at these locations were well below the EPA primary drinking water standard (DWS). However, a well in another onsite location showed a sampling result exceeding the EPA DWS in 2013, and the data suggests that the source at this location was from historical water spills, and not from ongoing activities (page 3-38).

Recommendations: Updated results of the ongoing tritium monitoring by the TVA should be included in the FGSEIS. In addition, the FGSEIS should clarify frequency of sampling and progress of the coordination efforts to determine the extent of contamination and source(s) of contamination.

Environmental Justice (EJ)

The DGSEIS evaluated the potential human health and environmental effects of the proposed action and other alternatives on EJ populations. The DGSEIS concludes that would be no disproportionately high and adverse human health and environmental effects from the continued operation of SQN during the license renewal term. Subsistence consumption of fish and wildlife near the SQN site was also taken into consideration during this evaluation.

Recommendations: Communities with EJ concerns may experience both benefits and burdens associated with this project, and should be involved in meaningful discussions with the project team throughout the decision-making process. We encourage the project team to continue coordinating with the communities that may be impacted by the project. Meaningful involvement and discussion of project issues should take place throughout project planning.

Efforts to meaningfully involve and outreach to residents near the site and with increased visibility to the facility's structures and its emissions should be made. In addition, cumulative impacts, especially regarding surface water and drinking water sources, should be monitored as the project progresses.

Threatened and Endangered Species

The DGSEIS states that there would be no changes to river water temperature, entrainment and impingement of aquatic species, or significant adverse impacts on Federal and State threatened and endangered species.

Recommendations: The EPA defers to the U.S. Fish and Wildlife Service (FWS) and the State wildlife agencies on these issues, and recommends that the FGSEIS provide updated information regarding the consultation process with the FWS and State agencies.

Indirect and Cumulative Impacts

The potential cumulative impacts for the proposed project would vary, depending upon the resource. The DGSEIS evaluates potential cumulative impacts on resources including air, water, aquatic ecology, terrestrial ecology, human health, socioeconomics and cultural resources.

Recommendations: The FGSEIS should provide updated information regarding the project team's outreach and coordination with resource agencies regarding avoidance and mitigation planning for impacts, and we recommend that continuing coordination take place as the project

planning for impacts, and we recommend that continuing coordination take place as the project proceeds in order to minimize direct, indirect and cumulative impacts. We recommend that impacts be avoided to the extent feasible, and that unavoidable impacts be mitigated in consultation with resource agency recommendations.

Historic Preservation

The DGSEIS includes a discussion of cultural and historic resources, and describes the project team's coordination with the Tennessee State Historic Preservation Office (SHPO). On September 23, 2013, the Tennessee SHPO concurred that there are no sites eligible for listing on the National Register of Historic Places within the SQN plant boundary. The DGSEIS states that the Preferred Alternative would not result in any changes to historic or cultural resources.

Recommendations: EPA defers to the SHPO on these issues, and recommends that the FGSEIS should include an update of coordination activities with the SHPO and stakeholders.

Greenhouse Gases (GHGs)

The DGSEIS reviewed the expected greenhouse gas emissions of the project alternatives. Page 4-94 describes GHG emissions under the proposed action (the license renewal alternative).

Recommendations: Efforts should be made to minimize GHG emissions to the extent feasible. Clean energy options, such as energy efficiency and renewable energy, should be a consideration in the purchase of maintenance equipment and vehicles. In addition, the EPA recommends that the project team thoroughly consider the need for measures to manage potential climate-related impacts, such as potential increases in storm frequency and intensity resulting in increased floodwater flows. The FGSEIS should address measures for climate change adaptation for the project, taking into consideration site-specific conditions. Please refer to EPA's website (www.epa.gov/climatechange) for useful information about climate change.

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment